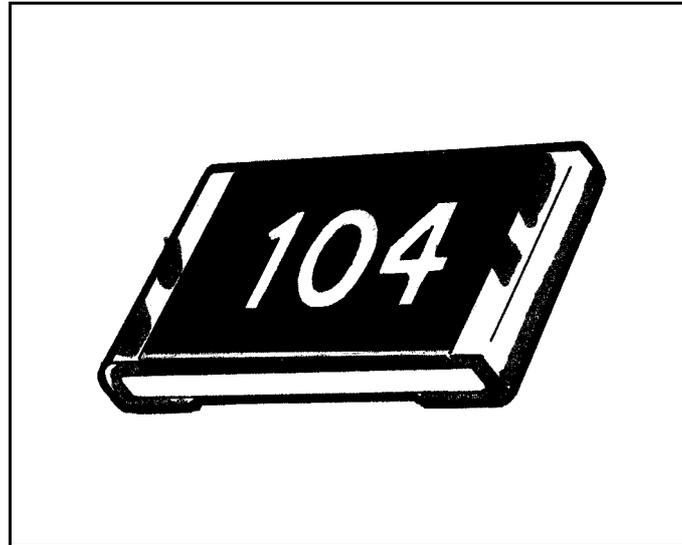


Thick Film Chip Resistors



TYPE CRG SERIES

Precious metal terminations are screen printed onto a ceramic base and fired. The resistive element is screen printed and fired and the passivation layer added. Each resistor is trimmed to tolerance by laser. The pre-scribed tile is broken into strips, the end plating is fired on and the strips broken into individual components. Final termination is made by electroplating.

KEY FEATURES

- Thick film resistors with a high power to size ratio, ideally suited to industrial and general purpose use. A range from 1 ohm to 10 Mohms and tolerances of 1% and 5%. Also including zero ohm links.
- CRG chip resistors are suitable for most applications, including high frequency operation, owing to the short lead structure and low capacitance.

STOCKISTS:

This product is stocked by RS and Micromark.

TYPE CRG SERIES

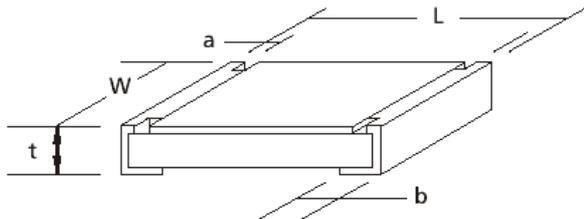
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SPECIFICATIONS

	UNITS	0402			0603			0805		
Rated Power @ 70 °C	Watts	0.063			0.1			0.125		
Resistance Range	Min	10	1	10	10	1	10	10	1	10
	Max	1M0	9R1	3M3	1M0	9R1	10M	1M0	9R1	10M
Tolerance	%	1	5	5	1	5	5	1	5	5
Code letter		F	J	J	F	J	J	F	J	J
Selection Series		E24	E24	E24	E24 E96	E24	E24	E24 E96	E24	E24
Temperature Coefficient	ppm/°C	±100	±350	±200	±100	±350	±200	±100	±350	±200
	UNITS	1206			2010			2512		
Rated Power @ 70 °C	Watts	0.25			0.5			1		
Resistance Range	Min	10	1	10	10	1	10	10	1	10
	Max	1M0	9R1	10M	1M0	9R1	10M	1M0	9R1	10M
Tolerance	%	1	5	5	1	5	5	1	5	5
Code letter		F	J	J	F	J	J	F	J	J
Selection Series		E24 E96	E24	E24	E24 E96	E24	E24	E24 E96	E24	E24
Temperature Coefficient	ppm/°C	±100	±350	±200	±100	±350	±200	±100	±350	±200

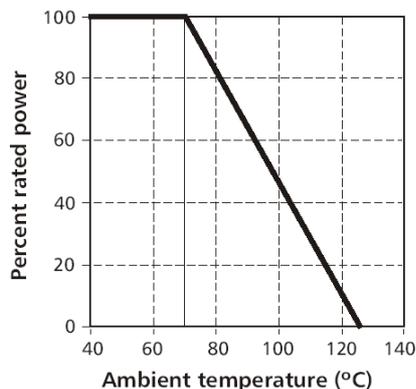
	UNITS	0402	0603	0805	1206	2010	2512
Working Voltage	Volts	50	75	150	200	200	200
Maximum Overload Voltage	Volts	100	150	300	400	400	400
Operating Temperature Range	°C	-55 to +125					
Climatic Category		55/125/56					
Insulation Resistance Dry Min	Mohms	1,000					
Stability	%	3					
Surface Temp Rise	°C/W	400					
Zerohm	Current Max	1	1	2	2	2	2
	Resistance Max	<20 mohm					

DIMENSIONS



STYLE	L	W	t	a	b
0402	1.0 ± 0.1	0.5 ± 0.1	0.35 ± 0.05	0.2 ± 0.1	0.25 ± 0.1
0603	1.6 ± 0.1	0.8 ± 0.1	0.45 ± 0.1	0.3 ± 0.2	0.2 ± 0.1
0805	2.1 ± 0.2	1.3 ± 0.1	0.5 ± 0.1	0.4 ± 0.2	0.3 ± 0.2
1206	3.1 ± 0.2	1.55 ± 0.1	0.55 ± 0.1	0.45 ± 0.2	0.4 ± 0.2
2010	5.0 ± 0.2	2.5 ± 0.2	0.6 ± 0.1	0.6 ± 0.2	0.6 ± 0.2
2512	6.4 ± 0.2	3.2 ± 0.2	0.6 ± 0.1	0.7 ± 0.2	0.7 ± 0.2

DERATING CURVE



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MOUNTING

The resistors are suitable for processing on automatic placement equipment.

MARKING

CRG0805, CRG1206, CRG2010, CRG2512

E24 series resistors are marked with a three digit code.

E96 series resistors are marked with a four digit code.

Zerohm components are marked '0'.

CRG0603

E24 5% series are marked with a three digit code.

E24 1% series are marked with a three digit code.

E96 series are marked with the international alphanumeric three character code (available on request).

EXCEPT 10, 11, 13, 15, 20 & 75 decades which are marked as the E24 series.

CRG0402 series unmarked.

STORAGE

Unopened reels should be stored within a temperature range of +5 °C to +25 °C, separated from any dust, chemicals and solvent based materials. Non-adherence to this procedure could effect the solderability of this product.

PACKAGING

All chip resistors are supplied on reels. For details, see figures 1 - 4. Also available in bulk cassettes.

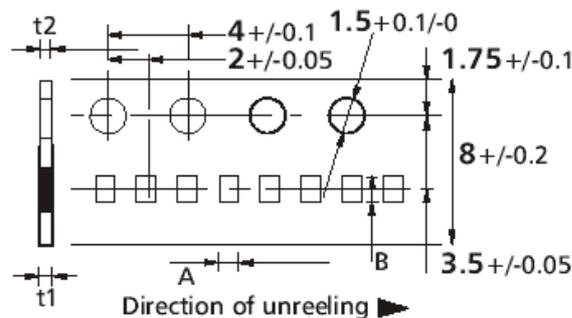


Fig. 1 - 8mm wide tape - 2mm pitch

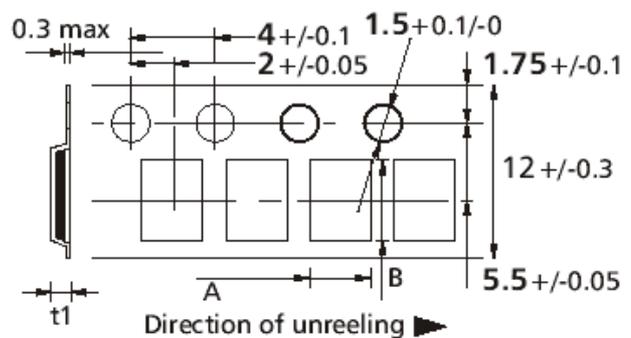


Fig. 3 - 12mm wide blister tape

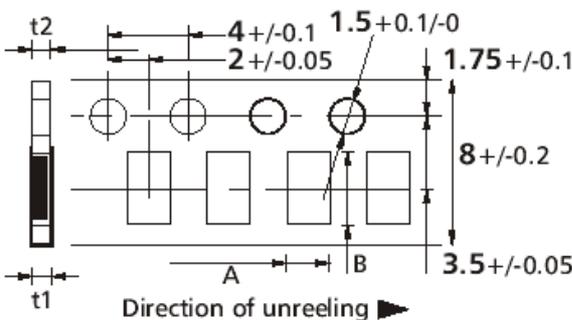


Fig. 2 - 8mm wide tape - 4mm pitch

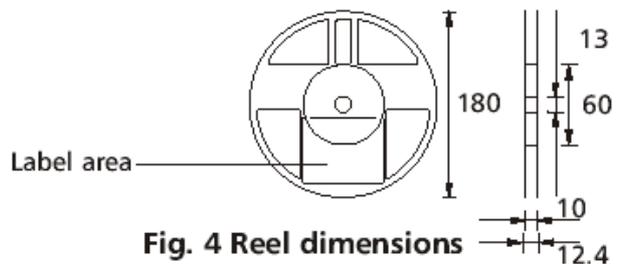


Fig. 4 Reel dimensions

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PACKAGING (cont'd)

	0402	0603	0805	1206	2010	2512
Tape Width	8	8	8	8	12	12
Pitch	2	4	4	4	4	4
A	0.63	1.1	1.65	2.0	2.9	3.4
tol	± 0.05	± 0.2	± 0.2	± 0.15	± 0.1	± 0.1
B	1.13	1.9	2.4	3.6	5.3	6.6
tol	± 0.05	± 0.2	± 0.2	± 0.2	± 0.1	± 0.1
t1	0.55	0.7	0.9	0.9	1.0	1.0
tol	± 0.1	± 0.1	± 0.1	± 0.1	± 0.1	± 0.1
t2 max	0.5	0.8	1	1	-	-
Reel qty.	10000	5000	5000	5000	4000	4000

Larger reel sizes available on request.

PERFORMANCE CHARACTERISTICS

The evaluation of the performance characteristics is carried out with reference to IECQ specifications QC 400 000 and QC 400 100.

TEST REF	Long Term Tests ±(3% + 0.1 ohm)
4.23	Climatic sequence
4.24	Damp heat, steady state
4.25.1	Endurance at 70 °C
4.25.3	Endurance at 125 °C
TEST REF	Short Term Tests ±(1% + 0.05 ohm)
4.13	Overload
4.32	Adhesion
4.33	Bond strength of end face plating
4.19	Rapid change of temperature
4.18	Resistance to soldering heat

HOW TO ORDER

Orders for these components should include the following information:-
Type, tolerance code letter and value

e.g. CRG0603 J 1K0 (CRG0603ZR for zerohm links)

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